In the Claims

1. (Currently amended) An apparatus for holding an optical assembly having a housing structure that encloses at least one optical element in an imaging device which has a number of optical assemblies, wherein the optical assembly is suspended via at least one decoupling element in at least one area ~~in~~ contacting the housing structure and a supporting structure, wherein the resultant effect of the at least one decoupling element in the at least one area is to impede possible movement in terms of rotation or translation in at least one suitable one of three orthogonal spatial directions, thus resulting in at least one statically defined bearing.

2. (Previously presented) The apparatus as claimed in claim 1, wherein said optical assembly is suspended via said decoupling elements in at least two different areas in said supporting structure, wherein the resultant effect of said decoupling elements in each area is stiff in terms of rotation or translation in at least one suitable one of three orthogonal spatial directions, thus resulting in at least one statically defined bearing.

3. (Previously presented) The apparatus as claimed in claim 2, wherein said imaging device is an objective in the form of a catadioptric objective for a projection exposure system for microlithography.

4. (Previously presented) The apparatus as claimed in claim 3, wherein said optical assemblies are a lens group.

5. (Previously presented) The apparatus as claimed in claim 2 or 3, wherein said decoupling elements in the one area in which the load is passed to said supporting structure is stiff in the spatial direction at least approximately parallel to the force of gravity (g), wherein said optical assembly is suspended in the other area in said supporting structure via a combination of tangentially stiff decoupling elements and a membrane.

6. (Previously presented) The apparatus as claimed in claim 2, wherein the tangentially stiff decoupling elements and the membrane are connected via a stiff intermediate element.

7. (Previously presented) The apparatus as claimed in claim 1 or 2, wherein said decoupling elements are in the form of leaf spring elements.

8. (Previously presented) The apparatus as claimed in claim 2, wherein said decoupling elements are stiff in the spatial direction at least approximately parallel to the force of gravity (g) in the one area in which the load is transmitted to said supporting structure, wherein the suspension of said optical assembly in said supporting structure in the other area is provided via a large number of tangentially stiff, axially and radially soft elements.

9. (Previously presented) The apparatus as claimed in claim 7 or 8, wherein the position of the areas, the alignment of said leaf spring elements and the spring stiffness of said leaf spring elements are chosen such that a first natural form of the oscillation rotates about a point (P3) on said assembly which is neutral with respect to optical sensitivity.

10. (Previously presented) The apparatus as claimed in one of claims 1 or 2, wherein said decoupling elements are chosen such that thermal expansions between said supporting structure and said assembly do not lead to mechanical forces.

11. (Previously presented) Use of an apparatus as claimed in claim 1 in a projection exposure system for microlithography.

12. (New) An apparatus for holding an objective which has a number of optical elements, wherein the objective is suspended via at least one decoupling element in at least one area in a supporting structure, wherein the resultant effect of the at least one decoupling element in the at least one area is stiff in terms of rotation or translation in at least one suitable one of three orthogonal spatial directions, thus resulting in at least one statically defined bearing.

13. (New) The apparatus as claimed in claim 12, wherein the at least one decoupling element extends between the objective and the supporting structure.

14. (New) The apparatus as claimed in claim 12, wherein the objective comprises a housing having an interior to receive the number of optical elements, and wherein the at least one decoupling element extends between the housing and the supporting structure.

15. (New) The apparatus as claimed in claim 12, wherein the at least one decoupling element comprises a combination of tangentially stiff decoupling elements and a membrane.

16. (New) An apparatus for holding a catadioptic objective, wherein the catadioptic objective is suspended via at least one decoupling element in at least one area in a supporting structure, wherein the resultant effect of the at least one decoupling element in the at least one area is stiff in terms of rotation or translation in at least one suitable one of three orthogonal spatial directions, thus resulting in at least one statically defined bearing.

17. (New) The apparatus as claimed in claim 16, wherein the at least one decoupling element comprises a large number of tangentially stiff, axially and radially soft elements.

18. (New) The apparatus as claimed in claim 16, wherein a position, an alignment and a stiffness of the at least one decoupling element is chosen such that a first natural form of the oscillation rotates about a point on the catadioptic objective which is neutral with respect to optical sensitivity.

19. (New) A suspension apparatus for holding an objective having optical elements arranged in an interior of the objective, the suspension apparatus comprising:

at least one decoupling element extending between an exterior of the objective and a support structure; and

wherein the resultant effect of the at least one decoupling element on the objective is stiff in terms of rotation or translation in at least one suitable one of three orthogonal spatial directions, thus resulting in at least one statically defined bearing.

20. (New) The suspension apparatus as claimed in claim 19, wherein the at least one decoupling element comprises a combination of tangentially stiff decoupling elements and a membrane.

21. (New) The suspension apparatus as claimed in claim 19, wherein the at least one decoupling element comprises a large number of tangentially stiff, axially and radially soft elements.

22. (New) The suspension apparatus as claimed in claim 19, wherein a position, alignment and stiffness of the at least one decoupling element is chosen such that a first natural form of the oscillation rotates about a point on the objective which is neutral with respect to optical sensitivity.

23. (New) An apparatus for holding an optical assembly in an imaging device which has a number of optical assemblies, wherein said optical assembly is suspended via said decoupling elements in at least two different areas in said supporting structure, wherein the resultant effect of said decoupling elements in each area is stiff in terms of rotation or translation in at least one suitable one of three orthogonal spatial directions, thus resulting in at least one statically defined bearing; and

wherein said decoupling elements in the one area in which the load is passed to said supporting structure is stiff in the spatial direction at least approximately parallel to the force of gravity (g), wherein said optical assembly is suspended in the other area in said supporting structure via a combination of tangentially stiff decoupling elements and a membrane.